

# Integrated Head Neck and Face Protection

## Advanced Planning Brief to Industry

Mr. Donald R. Lee II  
[don.lee@us.army.mil](mailto:don.lee@us.army.mil)  
(508) 233-6299

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## Schedule & Cost

Tasks	FY11	FY12
Develop a Maxillofacial Protection System Performance Specification		
Eye Protection/Headset Communication System Interface		
Maxillofacial Protection		

### Purpose:

- There is no current acceptable/fieldable maxillofacial protection. This effort would provide several near to short term solutions to this technology gap and improve Soldier protection and survivability. The results of this effort would also provide feedback that will support S&T efforts ongoing for the HEaDS UP ATO.
- Develop a maxillofacial protection system that integrates with the Advanced Combat Helmet (ACH) and Combat Vehicle Crewman Helmet (CVCH).
- Develop product/interface solutions to integrate current level of eye protection with headset communication systems used with the ACH, and CVCH.
- These efforts would provide several near to short term solutions to this technology gap and improve Soldier protection and survivability.

### Products:

- A maxillofacial protection system performance specification
- Product/interface solutions to integrate current level of eye protection with other PPE and mission essential equipment (i.e. Night Vision Devices, headset communication system)
- Viable maxillofacial protection alternatives that have been anthropometrically and ballistically vetted

### Payoff:

- Improved Soldier protection and survivability
- Improved interface of eye protection and headset communication systems with the ACH and CVC
- A maxillofacial protection system that integrates into the ACH and CVC along with other PPE and mission essential equipment

## 1. What is the problem?

- Interference between products on the current APEL approved eyewear and headset communication systems compromises the performance characteristic of one or both systems when donned at the same time.
- Maxillofacial protection for the Warfighter is not available.

## 2. What are the barriers to solving this problem?

- Undefined eye protection interface requirements for use with headset communication systems
- Undefined maxillofacial performance requirements

## 3. How will you overcome those barriers?

- Develop communication system interface requirements for eye protection
- Work with MCoE, TRADOC, MEDCOM to defined a maxillofacial performance requirements including area of coverage and ballistic specifications. Proposed performance requirement are posed in section 5 of this document
- Utilize ballistic materials developed in 6.2 for maxillofacial protection

## 4. What is the capability you are developing?

- Optimized eye protection designs that will integrate with headset communication systems
- A maxillofacial protection system that allows the Warfighter to don ballistic face protection while wearing the ACH or CVCH and other PPE and mission essential equipment

## 6. Transition Milestones:

- Technology Transition Agreement: To be prepared in FY11
- Transition tech to PEO Soldier: PM SPE FY12

## 5a. Quantitative Metrics:

<u>Measure</u>	<u>Current</u>	<u>Prog. Obj.</u>	<u>Army Obj.</u>	<u>TRL</u>
Maxillofacial Ballistic Performance	N/A	Frag: 17gr min V50 = 1,850 fps	Same	Start: TRL Unk End: TRL 6
Maxillofacial Weight	N/A	Threshold: < 1.5 lbs; Objective: < 1.0 lbs	Same	Start: TRL Unk End: TRL 6

## 5b. Performance Requirements:

<u>Measure</u>	<u>Current</u>	<u>Prog. Obj.</u>	<u>Army Obj.</u>	<u>TRL</u>
Maxillofacial Protection System Compatibility	N/A	<ul style="list-style-type: none"> <li>- Compatible with both the CVC and ACH without modification to shells</li> <li>- Provides quick don/doff capability</li> <li>- Compatible with currently issued plate carrier and IOTV</li> <li>- Compatible with NVD mount and PVS-14s/PVS-7s</li> <li>- Compatible with all current weapon systems and sighting mechanisms</li> </ul>	Same	Start: TRL Unk End: TRL 6
APEL Eyewear Compatibility	N/A	<ul style="list-style-type: none"> <li>- Compatible with issued headset communication systems</li> </ul>	Same	Start: TRL Unk End: TRL 6

- Program kicked-off in Oct 2010
- Fully funded for FY11
- Maxillofacial Protection (ACH and CVCH)
  - Design Status:
    - ❖Two separate design contracts are in the process of being awarded to industry Contractors
    - ❖Government designs in development
    - ❖One COTS design will be evaluated
  - Preliminary ballistic and non-ballistic impact testing on an ACH government design is under way in conjunction with ARL/SLAD
  - Effort scheduled to end Sept 12

- APEL/Ear-muff interface
  - APEL items (plus two prototypes) and fielded ear-muff style comms systems sent to USAARL for noise attenuation testing to determine any protection loss when APEL and headset are worn together
    - ❖ Comms Systems:
      - ☐ MSA Sordin
      - ☐ Bose ITH
      - ☐ Racal ITH
      - ☐ PI-CVC
    - ❖ Testing completed Feb 11. Results showed some combinations of APEL and headsets worked well while other did not
  - Top five APEL performers selected for re-test for validation/verification
    - ❖ Testing scheduled for April 11
  - Effort ends Sept 11
- FY11 funding obligated, FY12 funding available



- Looking for improvements in:
  - Maxillofacial interface solutions: ACH, CVCH
  - Improved eyewear designs to improve ear-muff interface
  - Ear-muff headset designs to accommodate/improve APEL interface
  
- Natick Broad Agency Announcement (BAA)
  - Vehicle for proposal submissions
  - <https://www3.natick.army.mil/nsrdecbaa.html>

POC: Mr. Donald R. Lee II  
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